State of California
Department of Fish and Game

Memorandum

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To: Mary Dyas
California Energy Commission
Environmental Office, Siting Division
1516 Ninth Street, MS-40
Sacramento, California 95814

Date: March 26, 2008

From: W. E. Loudermilk, Regional Manager **Original initialed by Jeff Single for W. E. Loudermilk**
Department of Fish and Game – Central Region

Subject: Review of Carrizo Energy Solar Farm Project Application for Certification

The Department of Fish and Game has reviewed the information provided by Ausra CA II, LLC (applicant) in support of the Carrizo Energy Solar Farm (CESF) Project's Application for Certification. The Department reviewed the application contents to assist in the California Energy Commission's (Commission) Preliminary Assessment for the Project and to determine whether the application contains sufficient information to proceed with impact analysis. This memorandum further intends to identify the requirements of applicable State laws and regulations that the Department administers. It is our understanding that the Warren-Alquist Act (Public Resources Code Section 25000 et seq.) may exempt the Project from State permits which would normally be required, however, if this exemption does in fact apply, the Commission will include enforceable conditions of approval such that the Project will conform to the requirements of applicable State laws. It is important to note that the Department is currently evaluating the applicability of the Warren-Alquist Act and the Department's regulatory authority under the California Endangered Species Act (CESA); a decision and guidance is forthcoming. Similarly, it is our understanding that the Preliminary Assessment process is a California Environmental Quality Act (CEQA) equivalent. As such, this letter approaches the Project from the Department's CEQA Trustee and Responsible Agency perspective, while recognizing that a parallel process may actually occur.

Project implementation would result in construction of approximately 195 Compact Linear Fresnel Reflector solar concentrating lines and associated steam drums, steam turbine generators, air-cooled condensers, and infrastructure, producing up to a nominal 177 megawatts net. The CESF site would encompass approximately 640 acres in Section 28, Township 29 South, Range 18 East, in the California Valley and La Panza NE United States Geological Survey (USGS) 7.5 minute quadrangle maps (Quad), adjacent to California State Route 58 (SR-58). The 640-acre site would be fenced. An additional 380-acre "construction laydown area" would be located entirely in Section 33, Township 29 South, Range 18 East, in the California Valley Quad, which is directly south of the solar farm site, and across SR-58. It is our understanding that Section 33 would also be utilized as an employee parking area during construction and operation of the facility.

CEQA and Department of Fish and Game (DFG) Code

The Department is a Trustee Agency with the responsibility under CEQA for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment on environmental documents and impacts arising from project activities, as those terms are used under CEQA.

The Department is a Responsible Agency when a subsequent permit or other type of discretionary approval is required from the Department, such as an Incidental Take Permit, pursuant to CESA, or a Streambed Alteration Agreement issued under Fish and Game Code Section 1600 et seq. Both actions by the Department would be considered "projects" (CEQA Guidelines Section15378) and would be subject to CEQA.

Pursuant to Fish and Game Code Section 1600 et seq., the Department has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource. Placing temporary crossings in the creek present in Section 33 would normally be conducted under a 1600 Agreement, and the Project proponent would be required to submit a Stream Alteration Notification to the Department for this Project. We encourage the applicant to avoid impacting the streambed in this area by reconfiguring the laydown area to avoid use of the area south and west of the drainage; or, alternatively, by placing temporary structures, such as railroad flatcars, to span the small creek channel and avoid impacts to aquatic and semi-aquatic species which may utilize the creek, including western spadefoot toad (*Spea hammondii*), which is a State Species of Special Concern.

The biological studies found that this Project would likely result in "take" of the State threatened and Federally endangered San Joaquin kit fox (*Vulpes macrotic mutica*), and depending on the outcome of other studies, may affect other listed species. Pursuant to Fish and Game Code Section 2081 (CESA), an Incidental Take Permit is required for any otherwise lawful activities which could result in "take" (as defined by Section 86 of the Fish and Game Code) of any species listed under CESA. The Department typically relies on the Lead Agency's CEQA compliance to make our own findings. For the Lead Agency's CEQA document to suffice for permit/agreement issuance, it must fully describe the potential Project-related impacts to stream/riparian resources and listed species, as well as commit to measures to avoid, minimize, and mitigate impacts to these resources. Impacts to State-listed species must be "fully mitigated" in order to comply with CESA, which is a much more stringent standard than the "mitigate to less than significant level" criteria of CEQA. If a CEQA document does not contain this information, the Department may need to act as a Lead CEQA Agency and complete a subsequent CEQA document. This could significantly delay permit issuance and, subsequently, Project implementation. In addition, CEQA grants Responsible Agencies authority to require changes in a project to lessen or avoid effects of that part of the project which the agency will be called on to approve, such as the proposed bridge and channel widening (CEQA Guidelines Section 15041).

California Endangered Species Act Compliance: The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered, pursuant to Fish and Game Code Section 2081. If the Project could result in the "take" of any species listed as threatened or endangered under CESA, the Department may need to issue an Incidental Take Permit for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (Sections 21001{c}, 21083, Guidelines Sections 15380, 15064, 15065). Significant impacts must be avoided or mitigated to less than significant levels, unless the CEQA Lead Agency makes and supports a Statement of Overriding Considerations (SOC). Be advised that CESA does not allow issuance of "take" authorization if there are significant unmitigated impacts to listed species or utilization of an SOC regarding listed species.

The CEQA Lead Agency's SOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2081, under which impacts to State threatened and endangered species must be minimized and fully mitigated. In other words, compliance with CESA does not automatically occur based on local agency project approvals or CEQA compliance; consultation with the Department is warranted to ensure that Project implementation does not result in unauthorized "take" of a State-listed species.

Incidental "take" authority is required prior to engaging in "take" of any plant or animal species listed under CESA. Plants listed as threatened or endangered under CESA cannot be addressed by methods described in the Native Plant Protection Act. No direct or indirect disturbance, including transplantation, may legally occur to State-listed species prior to the applicant obtaining incidental "take" authority in the form of an Incidental Take Permit.

The Project applicant will need to 1) provide an analysis of the impact of the proposed taking; 2) provide an analysis of whether issuance of an Incidental Take Permit would jeopardize the continued existence of kit fox and any other State-listed species for which "take" coverage is being sought; 3) propose measures that minimize and fully mitigate the impacts of the proposed taking; 4) provide a proposed plan to monitor compliance with the minimization and mitigation measures; and 5) provide a description of the funding source and level of funding available for implementation of the minimization and mitigation measures. The Department can provide a complete list of required Incidental Take Permit application components upon request.

Analysis

The Project is proposed in an area which supports one of the highest concentrations of special status species in California, as well as uncommon native game populations for which the State has committed considerable effort and public funds to re-establish and manage. The site is also in an area identified as critical for the recovery of Federally listed species and is a crucial wildlife movement corridor. The biological studies do not adequately consider this setting. In summary, the Department has determined that the biological inventory work is incomplete and provides insufficient information to determine the impacts, the significance of the impacts, and the mitigation required to fully mitigate the impacts. Following are the primary reasons why we have determined the application information is incomplete:

- A botanical inventory was not completed.
- The blunt-nosed leopard lizard survey was incomplete and did not follow protocol.
- No conclusive surveys were performed to identify small mammal species occupying the site.
- The biological impact analysis lacks a correct assessment of effects on wildlife movement.
- The cumulative impacts analysis does not consider impacts from specific, known, probable future projects.
- At least ten special status species that are known to utilize the site or that most likely utilize the site were not addressed.
- Project details which are mentioned in the text are not sited on maps, and/or impacts of those portions of the project are not analyzed in the document, in particular, parking areas and detention basins.

The following paragraphs discuss these items and several other essential details which are lacking.

Botanical Inventory: Botanical surveys should follow guidelines developed by the Department (CDFG, 2000) and the United States Fish and Wildlife Service (USFWS) (USFWS, 2000). Botanical surveys should cover the entire property and should be timed appropriately to detect all species which may occur on the property before impact analysis occurs. Use of reference sites is recommended, particularly for seasonably variable, often difficult to detect species. A site's disturbed nature does not preclude it from supporting special status plant species. This is especially true of areas such as this, where intensive agriculture has historically been inconsistent, allowing native plant and animal species to persist in a dryland grain crop and grazing lands matrix.

The botanical surveys did not follow either protocol referenced above. These protocols are the standard for impact assessment in California and were recommended to the applicant in May 2007 by Deborah Hillyard of the Department; the applicant was further advised that surveys conducted in 2007 would not likely not be sufficient to determine the presence or absence of special status plant species, given the below-average rainfall that occurred during 2007; many areas had little to no germination of annual plant species. In addition, surveys completed thus far were conducted on two consecutive days in April, which even in a good rainfall year would not capture the blooming seasons of many special-status plant species which occur in the vicinity. In addition, plants were not identified to species and subspecies levels. *Eriogonum sp., Plagiobothrys sp.,* and *Cryptantha sp.* were all identified only to the generic level. All of these genera contain special status taxa which could occur on-site. No reference sites were used for any rare plants to ensure that they were detectable during the survey period, which would be especially important in 2007 since it was an especially poor year for plant surveys in this area.

Blunt-Nosed Leopard Lizard (BNLL): Volume 1 of the application states that eight surveys for the State endangered and Fully Protected and Federally Endangered blunt-nosed leopard lizard (*Gambelia sila*) were completed in Section 28 and five in Section 33. Based on the data sheets

provided by URS, ten adult surveys were performed in Section 28 and five were performed in Section 33. Table 5.6.2 is misleading because it lists 14 adult survey days but does not communicate that each day apparently covered only portions of the Project site. The table also lists surveys on June 12, 18, and 20, which do not have supporting data sheets. The discrepancies between the application's discussion, Table 5.6.2, and the data sheets should be clarified. Regardless of which is correct, it appears that the survey protocol was not followed. The surveys deviated from the protocol (CDFG 2004) in the following manner:

1. The required 12 adult surveys were not completed for any portion of the site.
2. The required Elkhorn Plain voucher/reference site was not used to determine whether lizards were detectable during surveys.
3. Level II survey personnel were not present on June 27, 2007, and August 20, 2007
4. The adult season surveys exceeded the protocol limit of ten surveys per 30-day period and four surveys per 7-day period

The application generally relies more on characterizing the site as highly disturbed, rather than providing defensible survey data, to rule out species' presence. According to the data sheets, BNLL adult surveys were completed in Section 28 between June 15 and July 5, and in Section 28 between July 9 and July 13. These surveys were performed at the end of the adult survey season when lizards in the Carrizo Plain area are typically the least detectable, even in good survey years. Information provided to the applicant by Dr. David Germano indicated that the dry winter of 2006-2007 resulted in poor survey results elsewhere in 2007 and that surveys in 2007 may not detect the species (letter to Wesley Rhodehamel, Live Oak Associates, June 9 2007).

Whiptails (*Aspidoscelis tigris*) were observed during the surveys. This species is usually found inhabiting the same habitat types as BNLL in the California Valley/Carrizo Plain area. This observation indicates that historic land uses have not precluded those species which have similar habitat requirements to BNLL (e.g., open foraging ground, underground refugia, and invertebrate and smaller lizard prey base).

Based on the limited survey effort, poor survey conditions, and deviation from Department survey protocol, the Department does not concur that the survey effort was adequate to detect presence of this species within the Project area for the previously stated reasons. Because the BNLL is Fully Protected and therefore no "take," incidental or otherwise, can be authorized by the Department (or any other entity), protocol-level surveys must be conducted prior to any ground-disturbing activities, in all areas of suitable habitat. Suitable habitat includes all grassland and shrub scrub habitat that contains required habitat elements, such as small mammal burrows. These surveys, the parameters of which were designed to optimize detectability, must be conducted to reasonably assure the Department that "take" of this Fully Protected species will not occur as a result of disturbance associated with Project implementation. In the event that this species is detected during protocol-level surveys or during incidental observations, consultation with the Department is warranted to discuss how to implement the Project and avoid "take." Ground-disturbing activities must be avoided in all areas occupied by BNLL.

Birds: The application lacks discussion of potential impacts to avifauna within the facility. Specifically, the Department recommends an analysis of whether the extensive guy wire system, which supports the water lines above the reflectors, presents a threat to raptors and other large birds which are likely to fly into the site below the 56-foot tall water lines. The impact analysis should also determine whether the concentrated light and heat poses a risk to birds that would fly between the reflectors and water lines. If monitoring data are not available from similar facilities, then we recommend a predictive analysis that quantifies the light and heat levels that birds would encounter. If it appears that this could result in an adverse impact, then we recommend developing an adaptive management program, designed to avoid impacts to birds, to be approved by the Department. It is important to note that the Fish and Game Code protects birds, their eggs, and nests including: Sections 3503 (regarding unlawful "take," possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the "take," possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful "take" of any migratory nongame bird). These Fish and Game Code Sections do not allow for "take" nor is there a mechanism (permitting process) to allow for "take" unless a species is also listed under CESA. As a result, the Project and associated conditions of approval must include measures that prevent "take" of birds.

San Joaquin Kit Fox: The Project is at the south end of the corridor linking the Carrizo Plains Natural Area (now Carrizo Plains National Monument) to the satellite populations in the Salinas River and Pajaro River watersheds. The recovery plan identifies this corridor as essential to maintaining and recovering those populations and the species. The specified recovery action which applies to this site is as follows:

> *Protect and enhance corridors for movement of kit foxes through the Salinas-Pajaro Region and from the Salinas Valley to the Carrizo Plain and San Joaquin Valley.* (USFWS 1998).

The impact analysis and mitigation must consider the potential impacts to the corridor and corridor functions. The "Wildlife Corridors" section in the application does not recognize the kit fox corridor and mischaracterizes the site as an east-west corridor connecting the Temblor and Caliente mountain ranges. Potential corridor impacts to be evaluated should include, but not be limited to, loss of prey base and refugia for immigrating, emigrating, and dispersing individuals, reduced capacity for individuals to reside in the corridor, reduced genetic flow, increased predation resulting from impermeable fences (blocked escape routes), increased exposure to predation due to night lighting, increased exposure to traffic on the highway due to the impermeable fence, reduced corridor width, and increased animal/vehicle traffic collisions due to traffic increases.

The application characterizes the kit fox habitat as low-quality and recommends a 1:1 mitigation ratio. Based on past habitat evaluations prepared for the County of San Luis Obispo in this vicinity, the County and the Department have concluded that projects of *less than 40 acres* in this area require a 4:1 ratio. Due to the potential for substantial direct impacts (over 1,000 acres), indirect impacts, habitat fragmentation, and the critical location identified as essential to the species' recovery, the mitigation ratio would likely be higher than 4:1 to fully mitigate the habitat loss. Habitat of equal or greater biological value would be required for off-site mitigation.

Preservation or conservation bank credits may offset the direct habitat loss, but would not likely mitigate the habitat connectivity impacts (or offset similar impacts to the other species discussed in this letter). All opportunities to maintain habitat connectivity though the site should be explored. Analysis may find that on-site actions are infeasible or do not address the impacts. Actions which preserve and enhance the corridor, such as purchase and management of adjacent parcels, might be required to fully mitigate the corridor degradation. To comply with CESA permitting standards, the Department would have to conclude that kit fox impacts are fully mitigated. Corridor impacts and mitigation would have to be evaluated in a cumulative impact context, including quantified effects of the photovoltaic solar power installation proposed for the same vicinity.

Pronghorn: The application characterizes the pronghorn (*Antilocapra americana*) habitat losses and habitat connectivity effects as insignificant. It is the Department's opinion that the Project has the potential to substantially restrict pronghorn movement, reduce pronghorn habitat, and threaten this population's viability.

The Department's bi-annual aerial counts have established that the specific pronghorn group which inhabits the northern California Valley, where the Project is proposed, frequently utilizes the Project site and crosses SR-58 at or near the Project site. This area has the fewest buildings and cross-fences near the highway, making it the most likely highway crossing area within this group's range. For this group to remain viable, free movement across the highway and within its range is essential to access seasonably variable water and food sources. Maintaining connectivity between this group, the Carrizo Plain National Monument groups, and the Cholame Valley group will be essential to maintaining the overall San Luis Obispo County pronghorn population. The fact that the affected group so regularly crosses the highway and its associated fences speaks to its requirement to access all of its territory to obtain necessary resources; pronghorn road avoidance behaviors and difficulties in crossing fences are well documented in the literature. The Project would create a substantial, permanent, impermeable barrier for pronghorn at the highway and within the core of one group's home range. It would further degrade connectivity between all of the pronghorn groups in San Luis Obispo County.

Loss of foraging area and habitat connectivity would extend well beyond the Project footprint. Pronghorn are inherently wary of human activity and structures. Light, noise, buildings, reflectors, and human activity would likely cause pronghorn to avoid the Project area during and after construction by a wide margin, rendering much of the area surrounding the site unusable. Increased traffic on SR-58 would also reduce the crossing opportunities and increase the road kill risk for this diurnal species.

The proposed impermeable fencing is also likely to inhibit fawns and adults during pursuits, thereby increasing coyote predation. This is a known effect on pronghorn of livestock fencing and would be even greater with the proposed chain-link fence.

We recommend that the impact analysis consider an additional buffer, supported by literature on pronghorn behavior, around the Project site as permanently unusable for pronghorn. Then the impact analysis should assess the viability of this population considering the population size, recruitment rates, existing and proposed land uses (cumulative effects), forage and fawning

opportunities, watering sites, traffic increases, and the Project's direct and indirect habitat impacts. The Department can provide bi-annual herd counts, Global Positioning System (GPS) locations, sex ratios, and fawn count data.

Tule Elk: The application characterizes the tule elk (*Cervus elaphus*) habitat losses and habitat connectivity effects as insignificant. The Project would permanently displace a square mile of habitat, reducing the area's capacity to support tule elk. Direct impacts, cumulative habitat losses, and habitat connectivity impacts should be addressed as discussed above for pronghorn.

Pallid Bat: The application states that no pallid bat (*Antrozous pallidus)* a State Species of Special Concern roost sites were found on-site. The application and impact assessment should also address the permanent loss of one square mile of foraging habitat. Pallid bats forage mostly in grasslands and agricultural areas, such as those which occur within the Project site.

Water Use: The application documents a proposed substantial increase in ground water use compared to existing conditions. The impact analysis should address how this substantial increase would affect the ground water basin and biological resources. For example, would this affect watering sites for pronghorn and tule elk? Would drawdown increase percolation/infiltration rates and therefore decrease runoff, which could affect the hydroperiod of surface water bodies such as nearby vernal pools and Soda Lake? Is there a risk of subsidence on- or off-site?

Western Spadefoot Toad: The applicant notes that the California Natural Diversity Database (CNDDB) contains a record of this species breeding in a small drainage near the Project and states that the Project site is unsuitable habitat. The CNDDB record is from the same creek which crosses the construction laydown area. In the Project area, that creek appears to provide seasonal pools suitable for breeding, and the affected uplands are suitable for burrowing. Surveys for spadefoot toad should be completed for this Project. At a minimum, the applicant should search for spadefoot larvae during the appropriate season to determine potential impacts to breeding sites. The impact analysis should also evaluate the permanent effects on burrowing opportunities on Section 28. Soil compaction in the proposed construction laydown area and/or future use as a parking area may reduce future burrowing potential and directly affect toads which are already burrowed on-site.

Small Mammals: The application states that the site is unlikely to support Tulare grassphopper mouse (*Onychomus torridus tularensis)*, a State Species of Special Concern; the State and Federally endangered Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*); the State and Federally endangered giant kangaroo rat (*D.ingens*); and the State threatened San Joaquin antelope squirrel (*Ammospermophilus nelsoni*). With the exception of Tipton kangaroo rat, the site is suitable habitat for all of these species, as well as for short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus)* which is a State Species of Special Concern, which was not addressed. "Mice" burrows were observed on-site, but no trapping was performed to determine which small mammal species were present. Due to the potential for several special status small mammal species to occur on-site, the Department recommends small mammal trapping and focused San Joaquin antelope squirrel surveys. This will determine which species are using the

burrows observed on-site. The applicant should prepare a small mammal trapping proposal for Department approval. The proposal should include at least four consecutive nights of trapping by permitted individuals, and trap density and placement should be sufficient to detect presence of all nocturnal species discussed herein across the entire Project site, including the temporary impact areas. Focused surveys for San Joaquin antelope squirrel should coincide with their most active season, April 1 to September 30, and should be conducted only when air temperatures are between 20-30˚ C (68-86˚ F). Surveys should be conducted using daytime line transects with 10 to 30 meter spacing.

Pesticides, Herbicides, and Other Constituents of Concern: The application provides no information about how vegetation and burrowing animals would be controlled on-site. The impact analysis should disclose the anticipated use of herbicides and pesticides, compare the use to current levels on-site, assess the potential for these to affect native species (including all species discussed in this letter and the application), and assess the potential for such materials to migrate off-site via runoff, wind, and animals.

Information about the chemicals which will be used to clean the reflectors should also be included. The impact analysis should include the parameters mentioned above.

California Condor: The Project site lies within the State and Federally endangered and Fully Protected California condor (*Gymnogyps californianus*) range. The application states that the Project would not affect foraging habitat or roost sites. Condors foraged in California Valley following releases in the 1990s (Jesse Grantham, US Fish and Wildlife Service Condor Recovery Program, personal communication). Therefore, California Valley, with its herds of cattle, pronghorn, and elk as carrion sources, should be considered foraging habitat. Condors are likely to resume foraging in this vicinity in the future when their feeding sites are less controlled through the recovery program. Like the BNLL, this species is Fully Protected and "take" must be avoided.

Vernal Pool Branchiopods: The Project should address potential indirect impacts to vernal pool branchiopods off-site. Would the Project change hydrology with the watersheds of vernal pools or other occupied habitats that are off-site? The supplemental application information provided to the CEC predicts that the Project would result in a 36% runoff increase from the site. This runoff increase, and the potential contaminants in the runoff (e.g., vehicle contaminants and herbicides), should be discussed in the context of biological impacts. The effects of storm water flows exiting the detention basins are unclear.

Construction Laydown Area: The construction laydown area is intended to accommodate a fueling station adjacent to the intermittent creek in Section 33. We recommend that this facility be relocated in order to minimize the potential for spills or leakage to adversely affect the adjacent stream, and downstream resources. As noted above, relocating this facility away from that area would have the added advantage of obviating the need for crossings that may require permits, pursuant to Fish and Game Code Section1600 et seq.

We could not locate any discussion about the construction laydown area following construction. The impact analysis should disclose site restoration, planned uses, and ownership of that site following construction.

Storm Water Management: The application indicates that stormwater, which is considered a wastewater stream, will be collected and directed to locations away from the facility. It further indicates that stormwater will be detained in a series of catch basins, swales, and detention basins. However, even though the application references a storm water drainage system, we did not note a plan, schematics or specifications in the application. Although the application characterizes the 50-year, 24-hour storm event as a "low intensity rainfall", such an event could overwhelm the storm water management facilities; the application indicates that such runoff would be subsequently released from the detention basins to "established water courses in the area". Please note that Fish and Game Code Section 5650 prohibits the discharge of specific materials and substances into "Waters of the State," including those which are deleterious to fish and wildlife resources. The Department recommends that the applicant more fully characterize the storm water management system.

Avoidable Wildlife Impacts from Erosion Control Mesh Products: Due to this Project site's extensive wildlife habitat interface, the Department recommends that erosion control and landscaping specifications allow only natural-fiber, biodegradable meshes and coir rolls. "Photodegradable" and other plastic mesh products have been found to persist in the environment, ensnaring and killing terrestrial wildlife. Herpetofauna kills are well-documented (Barton and Kinkead 2005, Walley et al. 2005, Washington State Department of Transportation 2005). Plastic mesh erosion control products would likely cause unanticipated, avoidable impacts and potential "take" of listed species.

Indirect Land Conversion Effects: The impact analysis should explore whether permanently removing one land section from agricultural production would lead to converting another section to agricultural production, which would lead to more indirect effects on plants and wildlife. When assessed cumulatively, the two proposed solar installations in California Valley would remove nine sections from agricultural production. This is a substantial portion of the actively farmed lands in California Valley. If this leads to existing grazing lands being put into crop production, then the Project would further, indirectly, degrade wildlife habitat.

Similar land pressures resulting from conversions to biofuel crops have been demonstrated. Two studies recently found that market pressure to convert croplands and uncultivated areas to biofuel crops results in a net increase in atmospheric carbon due to the initial carbon release from plowing soils and the long-term loss of carbon sequestration provided by plant communities, despite the reduced emissions from using the biofuels (Fargione et al. 2008, Searchinger et al. 2008). Similarly, the proposed solar energy production may not offset the loss of carbon sequestration from displaced grasslands and dryland crops. This should be assessed in terms of cost versus public benefit, where costs are the carbon sequestration losses, wildlife impacts, and other environmental impacts, and the public benefits are reduction of carbon emissions and increased energy supply. In an Environmental Impact Report, this analysis would be in a Statement of Overriding Considerations, which documents why the potentially significant impacts cannot be avoided and how the "identified expected benefits from the Project outweigh the policy of reducing or avoiding significant environmental impacts of the project" (CEQA Guidelines Section 15043).

Species Not Addressed in the Application: The following species are known to occur on-site or nearby in California Valley and would likely be affected by the Project. The applicant's biological studies did not consider impacts to these species. The impact analysis and mitigation should address these species in addition to those already discussed:

Table 1. Additional Species Not Addressed in Applicant's Information

Species	Status*	Notes on Species Presence
short-nosed kangaroo rat	SSC	suitable habitat, species known from vicinity
bald eagle (nesting and wintering)	SE, FP	observed near site February 2008 by DFG staff
ferruginous hawk (wintering)	WL,	known to hunt on-site
golden eagle (nesting and wintering)	BCC,	known to be on-site
loggerhead shrike (breeding)	SSC,	known to hunt on-site, suitable nesting sites in
mountain plover (wintering)	BCC,	suitable habitat, species known from vicinity
San Joaquin whipsnake	SSC	suitable habitat, species known from vicinity
Kern primrose sphinx moth	FT	host plants (*Camissonia spp.*) likely on-site
coast (California) horned lizard	SSC	suitable habitat, species known from vicinity
Oregon vesper sparrow (wintering)	SSC	suitable habitat, species known from vicinity

*BCC: USFWS Birds of Conservation Concern. SSC: DFG Species of Special Concern. WL: DFG Watch List. FP: DFG Fully Protected. FT: Federal Threatened. FE: Federal Endangered. SE: State Endangered. ST: State Threatened.

Cumulative Biological Impacts: The application makes no statement about cumulative biological impacts. In addition, it considers only "permitted" projects and no other probable future projects, such as other solar power facilities proposed for the area. Further, the analysis does not describe the impacts of any of the projects identified, which makes it impossible to determine if there is a cumulative impact. Cumulative impact analyses should be species and habitat specific and should be quantified. This includes all the species and habitats discussed above and any others which the Project's biological inventories may reveal. CEQA requires that the cumulative impacts analysis identify past, present, and probable future projects which would affect the same resources (CEQA Guidelines Section 15130). The cumulative effects analysis should also identify the potential for increasing the area's greenhouse gas (GHG) emissions as it applies to the proposed Project's construction and operation, including worker's vehicle trips, and potential offsets in order to be consistent with AB 32, which commits to monitoring and reduction of GHG in the State.

Conclusions

In summary, the biological inventory work is incomplete to support a sufficient impact analysis. Inventory work should include complete surveys for BNLL, a botanical inventory, focused San Joaquin antelope squirrel surveys, a spadefoot toad breeding survey, and small mammal trapping to determine which species are present. The impact analysis should be based on complete inventory work and should expand on the other potential impacts discussed in this letter.

Thank you for the opportunity to comment on the Application for Certification. Depending upon the results of the described biological surveys, actual Project configuration, and other details which will be disclosed in the Preliminary Analysis, we may have additional comments and recommendations during the public comment period regarding avoidance, minimization, and mitigation of Project impacts to habitat and special status species. If you have any questions regarding these comments, please contact Dave Hacker, Environmental Scientist, at 3196 Higuera Street, Suite A, San Luis Obispo, California 93401, by telephone at (805) 594-6152, or email at dhacker@dfg.ca.gov.

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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION *For the CARRIZO ENERGY SOLAR FARM* **PROJECT**	**Docket No. 07-AFC-8** **PROOF OF SERVICE** (Revised 2/5/2008)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

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DECLARATION OF SERVICE

I, Christina Flores, declare that on March 27, 2008, I deposited copies of the attached Agency Comments – Department of Fish and Game in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

[Original Signed in Dockets]

Christina Flores